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ROB'S. NEW PR'Y AR.

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SUGGESTIONS TO TEACHERS.

PUPILS should be taught to recognize numbers of objects, before they are required to represent numbers by words or by figures. In all cases, the thought should be fully in mind before its oral or written expression is attempted.

The child's first step is to interpret what the teacher means when objects are shown by him; as, two apples, three spools, one book, two pencils, etc. The pupil may then take one book, two pencils, etc., as directed by the teacher.

Taking one pencil in the right hand, a pupil may show it to the class. The pupils will see that one pencil is shown. Show another pencil in the left hand. Bring both pencils together in the left hand, and the pupils will see that one pencil and one pencil are two pencils. Take one of the pencils away, and the pupils will see that one pencil from two pencils leaves one pencil.

Suggestions for a large number of such exercises are given in the lessons on pages 5 to 10; and by substituting objects for dots, hundreds of drill questions may easily be made.

The tables, like that on page 21, are arranged for an exhaustive review, and for slate work. First, the tables should be read with the missing figures supplied. Afterward, the tables may be used for slate work.

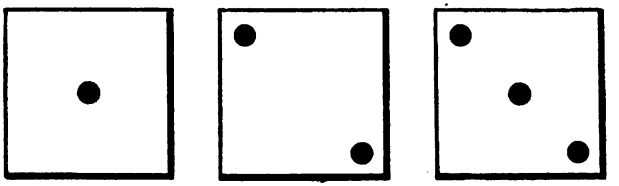
The drill in writing figures, and in making the tables in a neat and orderly form, is of value to the pupils. It may be well to alternate work upon the tables with other lessons, in order to secure variety.

In subtraction, note that when part of a number is taken away the result is a *remainder;* that when two different numbers are compared the result is a *difference.* Make the distinction between remainder and difference in asking questions, and the pupils will unconsciously fall into the proper use of these terms without formal instruction.

When working in fractions, be sure to have the pupils do the concrete work, as indicated, using slips of paper a foot long. The foot is a convenient unit, and the subdivisions will be large enough to show readily their relations to each other.

In all concrete examples, let the denomination of the answers be fixed in the mind of the pupil at the outset, and always require its expression as part of the answer. Strive for accuracy and rapidity in the work, and always insist upon clearness of expression in all explanations.

LESSON I.



How many dots do you see in the square at the left? How many in the middle square? How many in the square at the right?

Cover one of the dots in the middle square with your finger. How many dots do you now see in that square? One dot from two dots leaves how many dots? Take away your finger. How many dots do you now see in the square? One dot and one dot are how many dots? Two times one dot are how many dots?

Cover one of the dots in the next square with your finger. How many dots do you now see in that square? One dot from three dots leaves how many dots? Cover two of the dots. Two dots from three dots leave how many dots? Two dots and one dot are how many dots? Three times one dot are how many dots?

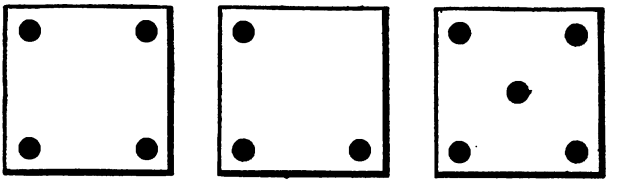
How many squares are there on this page?

Point out the first square.

Point out the second square.

Point out the third square.

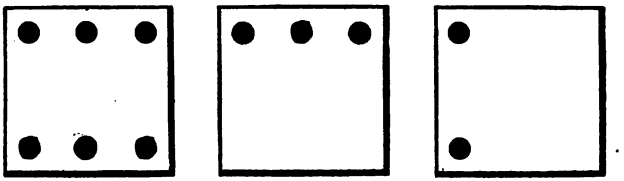
LESSON II.



How many squares are there on this page? Point out the first square; the second square; the third square. How many dots are there in the first square? In the second square? In the third square? How many less dots in the second square than in the first? How many more dots in the third than in the first square? How many more dots in the third than in the second square? How many are three dots and one dot? How many are five dots less four dots? How many are five dots less one dot? How many are four dots less one dot?

Cover the upper dot in the middle square. How many dots are there in the group you now see in that square? How many such groups can you see in the first square? How many groups of two dots are there in four dots? How many groups of two dots are needed to make four dots? If there are two equal groups of dots in four dots, how many dots must there be in each group? Equal groups of dots contain the same number. Two dots and two dots are how many dots?

LESSON III.

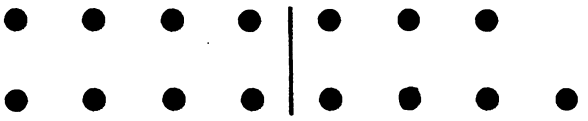


How many more dots are there in the first square on this page than in the third square on the page before? Five dots and one dot are how many dots? Four dots and two dots? Three dots and three dots? Two dots and four dots?

Cover four of the dots in the first square. How many dots do you now see in that square? How many more dots are there in the first square than in the third square? Cover three dots in the first square. How many dots do you now see in that square? How many more dots are there in the first square than in the second square?

How many groups of three dots are needed to make six dots? How many groups of two dots? Two times three dots are how many dots? Three times two dots are how many dots? If there are three equal groups of dots in six dots, how many dots must there be in each group? If there are two equal groups of dots in six dots, how many dots must there be in each group? Three dots and three dots are how many dots? Six dots less four dots are how many dots?

LESSON IV.

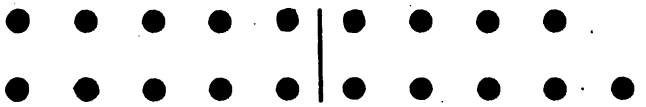


Cover the first dot in the upper row. How many dots do you now see in that row? Uncover the dot. How many dots do you now see in that row? Six dots and one dot are how many dots? Cover one of the dots in the lower row. How many dots do you now see in that row? How many more dots are there in the lower row than in the upper row? Seven dots and one dot are how many dots? Eight dots less one dot are how many?

Cover the dots in the upper row at the right of the vertical line. How many dots do you now see in that row? How many are seven dots less three dots? How many are four dots and three dots?

How many dots are at the left of the vertical line? How many groups of four dots can you see in eight dots? Show groups of four dots in two shapes. How many groups of two dots are there in eight dots? If there are two equal groups of dots in eight dots, how many must there be in each group? If there are four equal groups, how many must there be in each group?

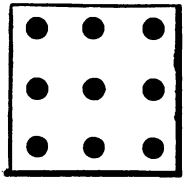
LESSON V.



How many more dots are there in the upper row on this page than in the lower row on the page before? Eight dots and one dot are how many dots? How many more dots are there in the lower row than in the upper row? Nine dots and one dot are how many dots?

Cover the dots in the upper row at the right of the vertical line. How many dots do you now see in that row? How many are nine dots less four dots? Cover the dots in the lower row at the left of the line. How many are ten dots less five dots?

How many dots do you see at the left of the vertical line? How many groups of two dots are there in ten dots? How many groups of five dots? Two times five dots are how many? Five times two dots are how many? How many groups of three dots do you see in nine dots? If there are three equal groups of dots in nine dots, how many must there be in each group? Three times three dots are how many?

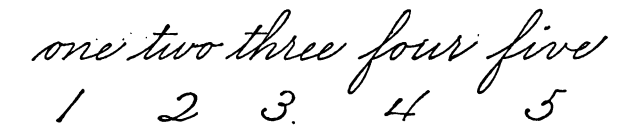


LESSON I.

Figures are generally used to express number. The printed words, printed figures, written words and written figures, from one to ten, are shown below: —

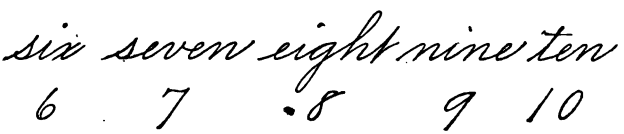
one	two	three	four	five
1	2	3	4	5

SLATE.



six	seven	eight	nine	ten
6	7	8	9	10

SLATE.



Read the words and figures.

Copy the written words and the written figures upon your slates.

Upon what page is lesson 2?

What page is this?

What is the page before this?

LESSON II.

1 and 1 are 2	1 and 6 are 7
1 and 2 are 3	1 and 7 are 8
1 and 3 are 4	1 and 8 are 9
1 and 4 are 5	1 and 9 are 10
and 5 are 6	1 and 10 are 11

Read all addition tables backwards as well as forwards; as, 10 *and* 1 *are* 11; 1 *and* 10 *are* 11, *etc.*

1. If a slate pencil costs 1 cent, and an orange 3 cents, how many cents will both cost?

SOLUTION.— *Three cents and* 1 *cent are* 4 *cents; both will cost* 4 *cents.*

2. Sarah had 4 books, and her mother gave her 1 more; how many books did she then have?

3. In a garden there are 1 plum tree and 6 pear trees; how many trees are there in the garden?

4. A man gave 8 dollars for a coat, and 1 dollar for a hat; how much did he give for both?

5. In a class there are 5 girls and 1 boy; how many pupils are in the class?

6. A boy gave 1 cent for a sponge, and 10 cents for a spelling book; what did he give for both?

7. I bought a pencil for 1 cent, and some paper for 9 cents; what did both cost?

How many are one and one?
Two ones are how many?
How many are one and two? Two and one?
How many are one and one and one?
Three ones are how many?
How many more are three ones than two ones?

LESSON III.

2 and 1 are 3	2 and 6 are 8
2 and 2 are 4	2 and 7 are 9
2 and 3 are 5	2 and 8 are 10
2 and 4 are 6	2 and 9 are 11
2 and 5 are 7	2 and 10 are 12

Remember to read all tables backwards as well as forwards.

1. James rode 2 miles in the stage, and 4 miles in the cars; how far did he ride in both?

SOLUTION. — *Two miles and 4 miles are 6 miles; he rode 6 miles in both.*

2. If a barrel of apples costs 2 dollars, and a barrel of flour 7 dollars, what will both cost?

3. A man had 2 sons and 5 daughters; how many children had he?

4. A lady gave 2 cents for some ribbon, and 10 cents for a comb; what did she pay for both?

5. A farmer sold a sheep for 2 dollars, and a hog for 9 dollars; what did he get for both?

6. John went to the river to fish, and caught 2 trout and 8 perch; how many fish did he catch?

7. If a boy spends 2 cents and has 2 left, how many cents had he at first?

How many are two and two?
Two twos are how many?
How many twos in four?
How many are two and four? Four and two?
How many are two and two and two?
Three twos are how many?
How many more are three twos than two twos?

LESSON IV.

3 and 1 are 4	3 and 6 are 9
3 and 2 are 5	3 and 7 are 10
3 and 3 are 6	3 and 8 are 11
3 and 4 are 7	3 and 9 are 12
3 and 5 are 8	3 and 10 are 13

---

1. Frank picked 3 ripe plums from one tree, and 5 from another; how many did he pick from both?

SOLUTION. — *Three plums and 5 plums are 8 plums; he picked 8 plums from both.*

2. A grocer sold 3 pounds of sugar to one man, and 4 to another; how many pounds did he sell to both?

3. Mary bought an inkstand for 7 cents, and some paper for 3 cents; how much did she pay for both?

4. A beggar received 6 cents from one little girl, and 3 from another; how many cents did he receive from both?

5. A boy found two hens' nests; in one there were 8 eggs, in the other 3 eggs; how many eggs were there in both nests?

6. A hoop cost 10 cents, and a top 3 cents; what did they both cost?

How many are three and three?
Two threes are how many?
How many threes are six?
How many are three and three and three?
Three threes are how many?
How much more are three threes than two threes?
How many are three and six? Six and three?

LESSON V.

4 and 1 are 5	4 and 6 are 10
4 and 2 are 6	4 and 7 are 11
4 and 3 are 7	4 and 8 are 12
4 and 4 are 8	4 and 9 are 13
4 and 5 are 9	4 and 10 are 14

---

1. Henry had 4 cents in one hand and 3 cents in the other; how many cents had he in both hands?

SOLUTION. — *Four cents and 3 cents are 7 cents; he had 7 cents in both hands.*

2. If a skein of silk costs 4 cents, and a yard of tape 6 cents, how much do both cost?

3. A farmer has 4 black sheep, and 8 white ones; how many sheep has he in all?

4. There are 5 birds on one tree, and 4 on another; how many birds are there on both trees?

5. George had 4 books, and his father gave him 4 more; how many books had he then?

6. If a lady paid 7 dollars for a dress, and 4 dollars for a bonnet, what did she pay for both?

7. There are 4 books on one shelf, and 9 on another; how many books are there on both shelves?

How many are four and four?
Two fours are how many?
How many are four and eight?
How many are eight and four?
Three fours are how many?
How many fours in twelve?
How many are two twos?
Which is more, *four and four* or *four and two twos*?

LESSON VI.

5 and 1 are 6	5 and 6 are 11
5 and 2 are 7	5 and 7 are 12
5 and 3 are 8	5 and 8 are 13
5 and 4 are 9	5 and 9 are 14
5 and 5 are 10	5 and 10 are 15

1. A miller sold 5 barrels of flour at one time, and 4 barrels at another; how many barrels did he sell in all?

2. George lost 2 cents, and had 5 cents left; how many cents had he at first?

3. Gave 5 cents for a writing book, and 3 cents for a pen holder; what was the cost of both?

4. A boy had 7 peaches in his basket, and his sister put in 5 more; how many peaches had he then?

5. Joseph rode 6 miles, and walked 5 miles; how far did he go?

6. Carrie had 5 roses, and Nellie had 8; how many roses had both?

7. A merchant sold 5 yards of calico at one time, and 5 at another; how many yards did he sell in all?

8. A farmer paid 10 dollars for a plow, and 5 dollars for a harrow; how much did he pay for both?

How many are five and five? Two fives?
How many are five twos?
What is the difference between two fives and five twos?
How many are five and five and five? Three fives?
How many fives in fifteen?
How many more are three fives than two fives?

LESSON VII.

6 and 1 are 7	6 and 6 are 12
6 and 2 are 8	6 and 7 are 13
6 and 3 are 9	6 and 8 are 14
6 and 4 are 10	6 and 9 are 15
6 and 5 are 11	6 and 10 are 16

1. A boy, after losing 6 marbles, had 4 left; how many had he at first?

2. Albert spent 6 cents, and had 5 left; how many had he at first?

3. A man paid 3 dollars for a barrel of apples, and 6 dollars for a barrel of flour; what did he pay for both?

4. A gardener picked 6 peaches from one tree, and 7 from another; how many peaches did he pick from both trees?

5. Dick caught 2 gray squirrels, and 6 red ones; how many did he catch in all?

6. A cabinet maker charges 6 dollars for a rocking chair, and 6 dollars for a table; what is the cost of both?

7. In the fruit dish there are 6 red apples and 9 green ones; how many apples are in the dish?

8. Edwin is 6 years old, and his sister Martha is 10 years older; what is the age of Martha?

How many are six and six?
Two sixes are how many?
How many sixes in twelve?
How much more is twelve than six?
How many are six and nine?
How many are six and six and three?
How many are six and ten?

LESSON VIII.

7 and 1 are 8	7 and 6 are 13
7 and 2 are 9	7 and 7 are 14
7 and 3 are 10	7 and 8 are 15
7 and 4 are 11	7 and 9 are 16
7 and 5 are 12	7 and 10 are 17

1. Bought a load of hay for 7 dollars, and some oats for 6 dollars; what was the cost of both?

2. David gathered 3 quarts of walnuts, and Charles 7 quarts; how many quarts did both gather?

3. Howard had 7 rabbits, and Herbert gave him 2 more; how many had he then?

4. A farmer picked 5 bushels of apples from one tree, and 7 bushels from another; how many bushels did he gather from both?

5. Fred is 8 years old; how old will he be 7 years from this time?

6. In a basket there are 7 bunches of green grapes and 7 bunches of purple ones; how many bunches of both are there in the basket?

7. If a boy earns 7 dollars in one week, and 9 dollars the next, how many dollars will he earn in 2 weeks?

8. In a shop, 2 men and 7 boys are employed; how many persons are employed?

How many are seven and seven?
Two sevens are how many?
How many sevens make fourteen?
How much more are two sevens than one seven?
How many are seven and ten?
How many are ten and seven?

LESSON IX.

8 and 1 are 9	8 and 6 are 14
8 and 2 are 10	8 and 7 are 15
8 and 3 are 11	8 and 8 are 16
8 and 4 are 12	8 and 9 are 17
8 and 5 are 13	8 and 10 are 18

1. Henry hoed 8 rows of corn one day, and 5 the next; how many rows did he hoe in both days?

2. Andrew had 8 apples and 8 peaches in his basket; how many had he of both?

3. There are 3 gentlemen and 8 ladies in a boat; how many persons in the boat?

4. A man had 8 dollars, and borrowed 6 more; how many dollars had he then?

5. Bought a pound of raisins for 9 cents, and a pound of sugar for 8 cents; what was the cost of both?

6. Emily had 7 white roses and 8 red ones; how many roses had she of both kinds?

7. A boy sold 8 boxes of matches to one man, and 4 boxes to another; how many boxes did he sell to both?

8. There are 10 shade trees now in the park, and 8 have been cut down; how many trees were set out?

How many are eight and eight?
Two eights are how many?
How many eights in sixteen?
How many more are two eights than one eight?
How many are eight and nine? Eight and ten?
How many more are *eight and ten* than *eight and nine*?

LESSON X.

9 and 1 are 10	9 and 6 are 15
9 and 2 are 11	9 and 7 are 16
9 and 3 are 12	9 and 8 are 17
9 and 4 are 13	9 and 9 are 18
9 and 5 are 14	9 and 10 are 19

---

1. If a firkin of butter is worth 9 dollars, and a cord of wood 6 dollars, what are both worth?

2. A lady bought a muff for 9 dollars, and a hat for 5 dollars; what did she pay for both?

3. Cora read 10 pages of history, and 9 pages of poetry; how many pages did she read in all?

4. A traveler paid 9 dollars a week for his board, and 7 dollars a week for his horse; how much did he pay for both?

5. Annie had 9 pictures, and her brother gave her 2 more; how many had she then?

6. If a peck of apples costs 9 cents, and a head of cabbage 4 cents, what will both cost?

7. In a certain class there are 9 boys and 8 girls; how many scholars are there in the class?

8. There are 9 geese and 9 ducks swimming in a pond; how many of both are there?

How many are nine and nine?
How many are six and three?
How many are nine and six and three?
How many are five and four?
How many are nine and five and four?
How many are seven and two?
How many are nine and seven and two?

LESSON XI.

10 and 1 are 11	10 and 6 are 16
10 and 2 are 12	10 and 7 are 17
10 and 3 are 13	10 and 8 are 18
10 and 4 are 14	10 and 9 are 19
10 and 5 are 15	10 and 10 are 20

---

1. If a man gives 10 dollars for a harness, and 4 dollars for a whip, how much does he give for both?

2. A farmer has 10 sheep in one lot, and 9 in another; how many has he in both?

3. A tailor sold a coat for 10 dollars, and a pair of pantaloons for 6 dollars; how much did he receive for both?

4. A beggar met two boys; one gave him 10 cents, and the other 7 cents; how many cents did they both give him?

5. There were 8 boys on one bench, and 10 on another; how many boys on both benches?

6. Alice had 10 cents, and her mother gave her 2 more; how many had she then?

7. I bought a pig for 3 dollars, and a calf for 10 dollars; how much did I pay for both?

8. Charles picked 10 pears from a tree, and left 10 on it; how many were on the tree at first?

How many are ten and ten? Two tens?

How many tens in twenty?

How much more is twenty than ten?

How many are ten and eight? Ten and two fours? Ten and four twos?

How many are ten and nine? Nine and ten?

LESSON XII.

GENERAL REVIEW.

For +, read and. For =, read are.
Give results in first set of tables; as, 2 + 5 = 7.
Supply figures omitted in second set; as, 8 + 5 = 13.

2 + 5 =	7 + 9 =	5 + = 13	4 + = 10
6 + 2 =	6 + 5 =	4 + = 6	7 + = 10
2 + 4 =	3 + 6 =	3 + = 10	2 + = 10
8 + 9 =	4 + 4 =	6 + = 10	5 + = 14
9 + 4 =	7 + 8 =	7 + = 13	8 + = 16
4 + 7 =	9 + 3 =	6 + = 14	6 + = 13
8 + 6 =	2 + 9 =	9 + = 14	5 + = 10
7 + 2 =	8 + 3 =	8 + = 11	9 + = 16
3 + 3 =	3 + 8 =	9 + = 15	2 + = 8
2 + 2 =	5 + 6 =	5 + = 12	9 + = 18
3 + 9 =	5 + 8 =	6 + = 15	7 + = 16
4 + 5 =	4 + 2 =	7 + = 14	6 + = 11
9 + 8 =	3 + 7 =	3 + = 7	3 + = 9
8 + 5 =	6 + 4 =	8 + = 15	4 + = 8
4 + 9 =	7 + 6 =	4 + = 12	7 + = 15
5 + 4 =	6 + 8 =	9 + = 11	9 + = 12
2 + 7 =	9 + 5 =	5 + = 8	2 + = 11
7 + 5 =	8 + 3 =	6 + = 12	5 + = 9
2 + 3 =	9 + 6 =	3 + = 8	3 + = 11
5 + 2 =	5 + 7 =	7 + = 11	5 + = 11
6 + 9 =	4 + 6 =	2 + = 7	3 + = 12
7 + 7 =	7 + 3 =	6 + = 8	4 + = 9
3 + 4 =	2 + 8 =	2 + = 6	9 + = 17
8 + 7 =	5 + 9 =	8 + = 17	8 + = 13
4 + 8 =	8 + 8 =	9 + = 13	4 + = 13
9 + 2 =	6 + 7 =	4 + = 11	4 + = 7
5 + 3 =	5 + 5 =	8 + = 14	2 + = 9
6 + 6 =	9 + 7 =	6 + = 9	7 + = 12
3 + 5 =	2 + 6 =	7 + = 9	2 + = 5
7 + 4 =	9 + 9 =	3 + = 6	5 + = 7

Add:

2 + 2 + 2 + 2 + 2 =	2 + 2 + 2 + 2 + = 12
3 + 3 + 3 + 3 + 3 =	3 + 3 + 3 + 3 + = 18

LESSON XIII.

PROMISCUOUS EXAMPLES.

1. Henry paid 6 cents for an inkstand, 4 cents for some pens, and 5 cents for a writing book; how much did he pay for all?

SOLUTION. — *Six cents and 4 cents and 5 cents are 15 cents; he paid 15 cents for all.*

2. A drover bought 4 cows of one man, 3 of another, and 7 of another; how many cows did he buy in all?

3. Elizabeth gave 10 cents for three spools of thread, 3 cents for a thimble, and 5 cents for some needles; how many cents did she give for all?

4. A lady bought a dress for 8 dollars, a shawl for 9 dollars, and a parasol for 2 dollars; how many dollars did she pay for them all?

5. If a man paid 6 dollars for a cord of wood, 5 dollars for a load of hay, 4 dollars for some pork, and 3 dollars for some beef, how many dollars did he pay for the whole?

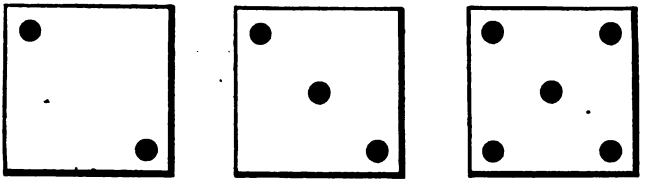
6. A boy traveled 6 miles one day, 8 miles the next day, and 5 miles the next; how many miles did he travel in three days?

7. A dealer bought books for 12 dollars, and sold them for 3 dollars more than cost; what was the selling price?

8. James caught 9 fish, and John caught 11 fish; how many fish did both catch?

9. How many cents are 6 cents and 3 cents and 7 cents?

LESSON I.



1. Cover the lower dot in the first square. How many dots do you now see in that square? How many are 2 less 1?

2. Cover the upper dot in the second square. How many dots do you now see in that square? How many more dots do you see in the second square than in the first square? How many dots do you see in the second square when you cover the two lower dots? What is the difference between 3 and 2?

3. Cover the middle dot in the third square. How many dots do you now see in that square? How many are 5 less 1?

4. Cover the three upper dots in the third square. How many dots do you now see in that square? How many are 5 less 3?

5. Cover the two lower dots in the third square. How many dots do you now see in that square? How many are 5 less 2?

6. How many more dots in the third square than in the second? What is the difference between 5 and 3? How many more dots in the third square than in the first? What is the difference between 5 and 2?

LESSON II.

1 from 1 leaves 0	1 from 6 leaves 5
1 from 2 leaves 1	1 from 7 leaves 6
1 from 3 leaves 2	1 from 8 leaves 7
1 from 4 leaves 3	1 from 9 leaves 8
1 from 5 leaves 4	1 from 10 leaves 9

---

1. A boy, having 3 apples, gave 1 to his sister; how many had he left?

SOLUTION.—*Three apples less* 1 *apple are* 2 *apples; he had* 2 *apples left.*

2. A little girl who had 4 cents, lost 1; how many had she left?

3. A tailor had 7 yards of cloth; he cut off 1 yard; how many yards had he left?

4. Mary had 8 dolls, and lost 1; how many had she left?

5. Robert found 5 ripe pears under a tree, and ate 1 of them; how many had he left?

6. If you make 10 marks on your slate, and rub out 1, how many remain?

7. If I pay 6 dollars for a barrel of flour, and sell 1 dollar's worth from it, what is the value of what remains?

How many are one from five?
How many are one from six?
How many more than five are six?
How many are seven and two?
One taken from seven and two leaves how many?
How many are three twos?
One taken from three twos leaves how many?

LESSON III.

2 from 2 leaves 0	2 from 7 leaves 5
2 from 3 leaves 1	2 from 8 leaves 6
2 from 4 leaves 2	2 from 9 leaves 7
2 from 5 leaves 3	2 from 10 leaves 8
2 from 6 leaves 4	2 from 11 leaves 9

---

1. Alice had 4 peaches, and gave 2 to Rollin; how many had she left?

2. Lucy had 6 sheets of paper, and gave 2 to Ann; how many had she left?

3. There were 8 pigeons on a tree, and 2 flew away; how many were there left?

4. Frank had 2 apples when he started for school; he gave 2 away; how many had he left?

5. Ella had 5 roses, and gave 2 to her teacher; how many had she left?

6. Clinton had 7 chickens, and a cat caught 2 of them; how many had he left?

7. A tinner had 3 milk pails, and sold 2 of them; how many had he left?

8. William had 9 cents, and gave 2 cents to a blind man; how many had he left?

How many are four and two?
Two from six are how many?
Two from four are how many?
How many twos in six?
How many are two and six?
How many are six and two?
Two from eight are how many?
Two from four and two are how many?

LESSON IV.

3 from 3 leaves 0	3 from 8 leaves 5
3 from 4 leaves 1	3 from 9 leaves 6
3 from 5 leaves 2	3 from 10 leaves 7
3 from 6 leaves 3	3 from 11 leaves 8
3 from 7 leaves 4	3 from 12 leaves 9

---

1. Mr. Jones sold some hay for 7 dollars, and received 3 dollars; how many dollars were due?

SOLUTION. — *The difference between 7 dollars and 3 dollars is 4 dollars; 4 dollars more were due.*

2. Samuel found 5 hens' eggs and 3 ducks' eggs; how many more hens' eggs than ducks' eggs did he find?

3. Marcus borrowed 10 cents, and paid 3; how much did he then owe?

4. A merchant bought 9 barrels of flour and 3 barrels of pork; how many more barrels of flour than of pork did he buy?

5. A man had 12 sheep in one pasture and 3 in another; how many more were there in the first than in the second?

6. Daniel had 3 apples, and each of his three sisters had one apiece; how many more had he than his sisters?

How many are three from nine?
How many are three from six?
How many threes in nine?
How many are three threes?
How many are three taken from three and three?
How many are three from eight?
How many are three from five and two?

LESSON V.

4 from 4 leaves 0	4 from 9 leaves 5
4 from 5 leaves 1	4 from 10 leaves 6
4 from 6 leaves 2	4 from 11 leaves 7
4 from 7 leaves 3	4 from 12 leaves 8
4 from 8 leaves 4	4 from 13 leaves 9

---

1. A farmer had 8 pigs and 4 cows; how many more pigs than cows had he?

2. A boy caught 10 pickerel and 4 bass; how many more pickerel than bass did he catch?

3. I bought a saddle for 13 dollars, and a bridle for 4 dollars; how much more did I pay for the saddle than for the bridle?

4. There were 9 passengers in the stage, and 4 on the outside; how many more were there in the stage than on the outside?

5. Laura found 11 roses on her bush, and Maud found 4; how many more roses had Laura than Maud?

6. A man paid 6 dimes for his dinner, and 4 dimes for his breakfast; how much more did he pay for his dinner than for his breakfast?

Four from eight leaves how many?
Four from four and four leaves how many?
How many fours in eight?
Two fours are how many?
How many are four from twelve?
How many are four from two and three?
How many are four from nine and two?
How many are four from four and seven?

LESSON VI.

5 from 5 leaves 0	5 from 10 leaves 5
5 from 6 leaves 1	5 from 11 leaves 6
5 from 7 leaves 2	5 from 12 leaves 7
5 from 8 leaves 3	5 from 13 leaves 8
5 from 9 leaves 4	5 from 14 leaves 9

1. A man earned 7 dollars in a week, and spent 5 dollars of it; how much did he save?

2. If 10 gallons of water run into a cistern in a minute, and 5 gallons run out, how many remain?

3. A peddler had 8 penknives, and sold 5 of them; how many had he left?

4. Alfred fired into a flock of 12 wild pigeons, and killed 5 of them; how many flew away?

5. A woman bought 14 yards of calico, and used 5 yards; how many yards had she left?

6. Charles, having 11 cents, gave 5 of them for an orange; how many had he left?

7. Stephen caught 13 fish, and gave 5 of them to a poor woman; how many had he left?

8. There are 6 white roses on a rose bush, and Eliza picks 5 of them for the flower vase; how many are left on the bush?

Fourteen less five are how many?
Nine less five are how many?
How many are fourteen less two fives?
Five and five are how many?
How many are ten less five?
How many are two fives?
How many fives in ten?

LESSON VII.

6 from 6 leaves 0	6 from 11 leaves 5
6 from 7 leaves 1	6 from 12 leaves 6
6 from 8 leaves 2	6 from 13 leaves 7
6 from 9 leaves 3	6 from 14 leaves 8
6 from 10 leaves 4	6 from 15 leaves 9

---

1. A boy gave 14 cents for a knife, and sold it for 6 cents; how much did he lose?

2. In a spelling class there are 7 girls and 6 boys; how many more girls than boys are in the class?

3. A merchant bought 9 barrels of salt, and after selling some, he found he had 6 barrels left; how many barrels did he sell?

4. If I owe 15 dollars, and pay 6 dollars, how much do I still owe?

5. Stephen had 13 marbles, and lost 6 of them; how many had he left?

6. There are 12 sheep in a yard, and all but 6 of them run away; how many are left?

7. Arthur rode 11 miles in the cars, and 6 in the stage; how many more miles did he ride in the cars than in the stage?

8. Carrie has 6 roses, and gives 6 to her teacher; how many has she left?

How many are twelve less six?
How many sixes in twelve?
Two sixes are how many?
Six twos are how many?
How many are three twos, and three?
Three and three, from twelve leaves how many?

LESSON VIII.

7 from 7 leaves 0	7 from 12 leaves 5
7 from 8 leaves 1	7 from 13 leaves 6
7 from 9 leaves 2	7 from 14 leaves 7
7 from 10 leaves 3	7 from 15 leaves 8
7 from 11 leaves 4	7 from 16 leaves 9

---

1. Edgar had 12 chickens, and a cat killed 7 of them; how many chickens had he left?

2. Julius had 7 cents, and his father gave him enough more to make 15; how many cents did his father give him?

3. A young lady went shopping with 16 dollars; when she returned she had only 7 dollars; how much money did she spend?

4. During 13 days, it rained 7 days; how many fair days were there?

5. In a class of 11 scholars, 7 recited perfect lessons; how many had imperfect lessons?

6. In a yard there were 9 shade trees, and the wind blew down 7; how many trees were left standing?

7. A man bought a calf for 7 dollars, and sold it for 10 dollars; how much did he gain?

Seven from fifteen leaves how many?
Seven from eight leaves how many?
How many are seven and one and eight?
Seven from fourteen leaves how many?
How many sevens in fourteen?
Two sevens are how many?
Two sevens less one seven are how many?

LESSON IX.

8 from 8 leaves 0	8 from 13 leaves 5
8 from 9 leaves 1	8 from 14 leaves 6
8 from 10 leaves 2	8 from 15 leaves 7
8 from 11 leaves 3	8 from 16 leaves 8
8 from 12 leaves 4	8 from 17 leaves 9

---

1. A farmer, having 15 sheep, sold 8 of them; how many had he left?

2. James had 9 oranges and 8 lemons; how many more oranges than lemons had he?

3. Peter carried 10 quarts of berries to market, and sold 8 quarts; how many quarts had he left?

4. A man sold a cow for 17 dollars, and took a plow worth 8 dollars, and the remainder in money; how much money did he receive?

5. There were 14 yards in a piece of merino, and a lady bought 8 yards for a dress; how many yards were left?

6. In a row of 12 shade trees, 8 trees die; how many are left?

7. George, having 16 cents, paid 8 cents for a slate; how many had he left?

8. Emma is 11 years old, and Henry is 8; what is the difference in their ages?

Sixteen less eight are how many?
How many eights in sixteen?
How many are nine and three?
How many are *eight* from *nine and three*?
How many are twelve and five?
How many are *eight* from *twelve and five*?

LESSON X.

9 from 9 leaves 0	9 from 14 leaves 5
9 from 10 leaves 1	9 from 15 leaves 6
9 from 11 leaves 2	9 from 16 leaves 7
9 from 12 leaves 3	9 from 17 leaves 8
9 from 13 leaves 4	9 from 18 leaves 9

---

1. James sold his colt for 16 dollars, and received in payment 9 dollars' worth of goods, and the rest in money; how much money did he receive?

2. Clara had 10 cents, and gave 9 cents for a new slate; how many cents had she left?

3. A painter bought 11 gallons of oil, and after using 9 gallons, sold the remainder; how much did he sell?

4. A grocer bought a quantity of butter for 12 dollars, and it being damaged, he was obliged to sell it for 9 dollars; how much did he lose by the bargain?

5. Charles, having 15 steel pens, gave away all but 9 of them; how many did he give away?

6. A man borrowed 14 dollars, and paid back 9 dollars; how much did he still owe?

7. A farmer had 9 sheep, and bought enough more to make 18; how many did he buy?

How many are nine and nine?
How many are eighteen less nine?
How many are eighteen, less six and three?
How many are three threes?
How many are eighteen less three threes?
How many are twelve less nine?
How many are twelve less three threes?

LESSON XI.

10 from 10 leaves 0	10 from 15 leaves 5
10 from 11 leaves 1	10 from 16 leaves 6
10 from 12 leaves 2	10 from 17 leaves 7
10 from 13 leaves 3	10 from 18 leaves 8
10 from 14 leaves 4	10 from 19 leaves 9

---

1. Ralph earned 17 cents and received 10 cents; how much is still due him?

2. In a certain school there are 18 girls and 10 boys; how many more girls than boys are there?

3. A grocer had 12 boxes of lemons, and sold 10 boxes; how many boxes had he left?

4. In a school there are 10 boys and 16 girls; how many more girls than boys are there?

5. Ella had 14 roses, and gave away 10 of them; how many had she left?

6. A man bought a keg of molasses containing 15 gallons; having used a part of it, he found there were 10 gallons left; how many gallons did he use?

7. Edgar had 19 cents, and spent 10 of them; how many cents had he left?

8. A farmer had 13 acres of wheat, and 10 acres of corn; how many acres more of wheat had he than of corn?

Ten from nineteen are how many?
How many are two fives?
Two fives from nineteen are how many?
How many are ten and five and three?
How many are three from ten and five?
How many are five from two fives?
How many are ten from two fives?

LESSON XII.

GENERAL REVIEW.

For −, read less.

14 − 5 =	14 − 6 =	9 − = 1	11 − = 7
8 − 2 =	7 − 4 =	10 − = 3	10 − = 7
9 − 5 =	15 − 8 =	9 − = 3	12 − = 7
10 − 9 =	11 − 5 =	11 − = 9	13 − = 6
7 − 6 =	12 − 7 =	7 − = 4	12 − = 4
12 − 9 =	8 − 3 =	8 − = 3	16 − = 7
8 − 4 =	13 − 3 =	14 − = 5	8 − = 1
10 − 5 =	11 − 9 =	13 − = 4	13 − = 7
11 − 6 =	12 − 6 =	9 − = 2	7 − = 2
	13 − 8 =	10 − = 2	12 − = 8
9 − 8 =	11 − 4 =	9 − = 6	16 − = 8
10 − 7 =	10 − 3 =	15 − = 8	15 − = 6
9 − 6 =	12 − 5 =	17 − = 9	11 − = 4
11 − 2 =	13 − 7 =	10 − = 6	9 − = 5
7 − 3 =	12 − 8 =	9 − = 7	12 − = 9
8 − 5 =	16 − 9 =	14 − = 7	15 − = 9
14 − 9 =	8 − 7 =	11 − = 8	18 − = 9
13 − 9 =	13 − 6 =	13 − = 8	11 − = 3
9 − 7 =	7 − 5 =	17 − = 8	10 − = 4
10 − 8 =	12 − 4 =	14 − = 6	13 − = 9
9 − 3 =	16 − 8 =	14 − = 9	14 − = 8
15 − 7 =	15 − 9 =	8 − = 6	7 − = 3
17 − 8 =	11 − 7 =	9 − = 4	15 − = 7
10 − 4 =	9 − 4 =	10 − = 1	11 − = 6
9 − 2 =	12 − 3 =	7 − = 1	13 − = 3
14 − 7 =	15 − 6 =	12 − = 3	8 − = 5
11 − 3 =	18 − 9 =	8 − = 4	13 − = 10
13 − 5 =	11 − 8 =	6 − = 1	11 − = 2
17 − 9 =	10 − 6 =	10 − = 5	12 − = 6
14 − 8 =	13 − 4 =	11 − = 5	12 − = 2

How many twos can be taken from six?

SOLUTION. 6 − 2 = 4 4 − 2 = 2 2 − 2 = 0

Three twos can be taken from six.

How many threes can be taken from nine? How many twos from twelve? How many fours from twenty? How many fives from fifteen? How many sevens from fourteen? How many sixes from eighteen?

LESSON XIII.

PROMISCUOUS EXAMPLES.

1. Oscar had 16 cents; he gave 6 cents to a beggar, and 5 cents for an orange; how many had he left?

SOLUTION. — *He gave away 6 cents and 5 cents, which are 11 cents; 16 cents less 11 cents are 5 cents. He had 5 cents left.*

2. A farmer, having 18 sheep, sold 7 at one time, and 4 at another; how many had he left?

3. A grocer bought 10 dozen of eggs of one man and 9 dozen of another; he then sold 6 dozen to one of his neighbors, and kept the rest for his own use; how many did he keep?

4. A farmer bought a cow for 15 dollars; he paid one 10 dollar bill, and one 2 dollar bill; how much did he still owe?

5. A boy, having 17 chickens, sold 5 of them at one time, 7 at another, and 2 at another; how many had he left?

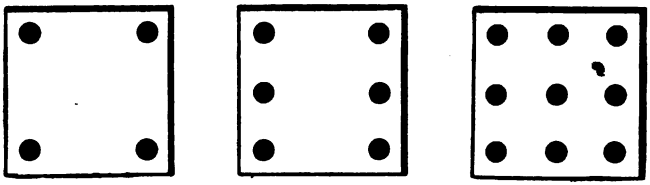
6. Sold some pork for 12 dollars, and received some sugar worth 3 dollars, a hat worth 2 dollars, some cloth worth 4 dollars, and the rest in money; how much money did I receive?

7. A man, who earned 20 dollars a week, paid 4 dollars for rent and 10 dollars for provisions; how much was left for other expenses?

8. Frank had 18 marbles; he gave 5 to Henry, 3 to James, 4 to John, and lost 2 marbles; how many had he left?

9. There were 19 fish in a pond; John caught 5 of them, and Harry caught 8; how many were left in the pond?

LESSON I.



1. How many groups of 2 dots can you see in the first square? Twice 2 dots are how many? How many are 2 times 2?

2. How many groups of 2 dots can you see in the second square? Three times 2 dots are how many? How many are 3 times 2?

3. Cover 2 of the dots in the second square. How many groups of 2 dots do you now see in that square? Three groups of 2 dots less 2 dots are how many dots? Three times 2, less 2 are how many?

4. How many groups of 3 dots do you see in the second square? Twice 3 dots are how many dots? How many are 2 times 3?

5. Cover 3 dots in the second square. How many groups of 3 dots do you now see in that square? Twice 3 dots, less 3 dots are how many? Twice 3, less 3 are how many?

6. How many groups of 3 dots do you see in the last square? Three times 3 dots are how many? How many are 3 times 3?

7. Cover 3 dots in the last square. How many groups of 3 dots do you now see in that square? Three times 3 dots, less 3 dots are how many? How many are 3 times 3, less 3?

LESSON II.

once 1 is 1	once 6 is 6
once 2 is 2	once 7 is 7
once 3 is 3	once 8 is 8
once 4 is 4	once 9 is 9
once 5 is 5	once 10 is 10

Read all multiplication tables backwards as well as forwards, as, 10 *times* 1 *are* 10 ; 9 *times* 1 *are* 9, *etc.*

1. At 1 cent each, what will 2 eggs cost?

SOLUTION. — *Two times* 1 *cent are* 2 *cents, which is the price of* 2 *eggs.*

2. If a man earns 1 dollar a day, how much can he earn in 4 days?

3. If Fred reads 1 hour each evening, how many hours will he read in 6 evenings?

4. What will 5 bushels of wheat cost, at 1 dollar a bushel?

5. At 1 cent each, what will 9 steel pens cost?

6. If a family eat 1 bushel of corn in a week, how many bushels would they eat in 10 weeks?

7. If Thomas gets 1 credit mark a day, how many credit marks will he get in 7 days?

8. If Henry writes 1 page a day, how many pages will he write in 8 days?

How much is once ten?
How much is once nine?
How much more is once ten than once nine?
How many are ten less one?
How many are nine and one?
How many are three ones?

LESSON III.

2 times 1 are 2	2 times 6 are 12
2 times 2 are 4	2 times 7 are 14
2 times 3 are 6	2 times 8 are 16
2 times 4 are 8	2 times 9 are 18
2 times 5 are 10	2 times 10 are 20

---

1. What will 2 pounds of rice cost, at 6 cents a pound?

SOLUTION. — *Twice 6 cents are 12 cents, which two pounds will cost. Twice means two times.*

2. Sarah gave 2 girls 3 apples apiece; how many did she give them both?

3. Two bushes have the same number of roses; on one there are 4 roses; how many are there on the 2 bushes?

4. Clara bought 2 yards of ribbon at 5 cents a yard; how much did she pay?

5. At 7 cents a pound, what will 2 pounds of sugar cost?

6. What will 2 tons of hay cost, at 9 dollars a ton?

7. At 5 dollars a barrel, what will be the cost of 2 barrels of flour?

8. At 2 cents apiece, what will 2 pears cost?

How many are twice two?
Six less twice two are how many?
Six and twice two are how many?
How many are four and two fives?
How many are two times eight?
How many are twenty less two eights?

LESSON IV.

3 times 1 are 3	3 times 6 are 18
3 times 2 are 6	3 times 7 are 21
3 times 3 are 9	3 times 8 are 24
3 times 4 are 12	3 times 9 are 27
3 times 5 are 15	3 times 10 are 30

---

1. If a man earns 9 dollars in one week, how many dollars will he earn in 3 weeks?

SOLUTION. — *He will earn 3 times 9 dollars, which are 27 dollars.*

2. If a farmer gives 4 bushels of corn for one yard of cloth, how many bushels must he give for 3 yards?

3. At 8 cents a yard, what will 3 yards of cloth cost?

4. In one dime there are 10 cents; how many cents in 3 dimes?

5. When sugar is worth 7 cents a pound, what will 3 pounds cost?

6. A drover paid 3 dollars a head for sheep; how much did he pay for 3 sheep?

7. Edgar gave 3 of his classmates 5 apples apiece; how many apples did he give them all?

8. A man bought 3 pictures at 6 dollars each; how much did he pay for them all?

How many are three times six?
How many sixes in eighteen?
How many are three times two?
How many are two times three?
How many are *three times two* and *two times three*?
How many are *three times two* less *two times three*?

LESSON V.

4 times 1 are 4	4 times 6 are 24
4 times 2 are 8	4 times 7 are 28
4 times 3 are 12	4 times 8 are 32
4 times 4 are 16	4 times 9 are 36
4 times 5 are 20	4 times 10 are 40

---

1. What will 4 yards of ribbon cost, at 4 cents a yard?

SOLUTION. — *Four times* 4 *cents are* 16 *cents, which four yards of ribbon will cost.*

2. If a horse eats 8 quarts of oats a day, how many quarts will he eat in 4 days?

3. At 9 dollars a week, what will 4 weeks' work cost?

4. If one bench will seat 6 pupils, how many pupils will 4 benches seat?

5. Martha's dress contains 7 yards of muslin, at 4 dimes a yard; what was the cost of the dress?

6. If Joseph walks 3 miles in an hour, how far will he walk in 4 hours?

7. A butcher bought 4 calves at 5 dollars apiece; what did they cost?

8. At 2 shillings a quart, what will 4 quarts of molasses cost?

How many are four times two?
How many twos in eight?
How many are four times nine?
How many are four times nine, less nine?
How many are three times nine?
How many are four times nine, and nine?

LESSON VI.

5 times 1 are 5	5 times 6 are 30
5 times 2 are 10	5 times 7 are 35
5 times 3 are 15	5 times 8 are 40
5 times 4 are 20	5 times 9 are 45
5 times 5 are 25	5 times 10 are 50

---

1. There are 7 days in 1 week; how many days are there in 5 weeks?

2. How far will a boat sail in 5 hours, at the rate of 9 miles an hour?

3. What will 5 barrels of flour cost, at 5 dollars a barrel?

4. How many yards are there in 5 pieces of cloth, if there are 10 yards in each piece?

5. If an orange is worth 4 apples, how many apples are 5 oranges worth?

6. If a pupil works 6 problems a day, how many problems will he work in 5 days?

7. Charles gave 5 beggars 5 cents apiece; how many cents did he give them all?

8. If a horse travels 8 miles an hour, how far can he travel in 5 hours?

9. Which is greater, 5 times 8, or 4 times 10?

10. Which is greater, 4 times 6, or 3 times 8? 5 times 6, or 3 times 10? 5 times 8, or 4 times 9?

How many are five times ten?
How many are five times ten, less ten?
How many are five times ten, less two tens?
How many tens can be taken from fifty?
How many are *five times six* and *five times two*?

LESSON VII.

6 times 1 are 6	6 times 6 are 36
6 times 2 are 12	6 times 7 are 42
6 times 3 are 18	6 times 8 are 48
6 times 4 are 24	6 times 9 are 54
6 times 5 are 30	6 times 10 are 60

---

1. A farmer bought a calf for 5 dollars; what would 6 calves cost at the same rate?

2. At 2 dollars a day, how many dollars would a man earn in 6 days?

3. What will 6 loads of hay cost, at 7 dollars a load?

4. George bought 6 lemons, at 4 cents apiece; what did they all cost?

5. There are 8 quarts in 1 peck; how many quarts are there in 6 pecks?

6. What will 6 pounds of honey cost, at 10 cents a pound?

7. What will 6 pounds of ginger cost at 6 cents a pound?

8. In a garden there are 6 apple trees, and there are 4 bushels of apples on each tree; how many bushels on all the trees?

How many are six times two?
How many are six times three?
How many are six times two, taken from six times three?
How many are six times four?
How many fours in twenty-four?
How many are six times four, and seven?
How many are four times six, and three?

LESSON VIII.

7 times 1 are 7	7 times 6 are 42
7 times 2 are 14	7 times 7 are 49
7 times 3 are 21	7 times 8 are 56
7 times 4 are 28	7 times 9 are 63
7 times 5 are 35	7 times 10 are 70

1. If a mill grinds 5 bushels of wheat an hour, how many bushels will it grind in 7 hours?

2. When wheat is worth 2 dollars a bushel, what will 7 bushels cost?

3. In a schoolroom there are 7 rows of desks, with 6 desks in each row; how many desks are there in the room?

4. If you write 8 lines in a day, how many lines will you write in 7 days?

5. At 10 dollars a month, how many dollars will a man earn in 7 months?

6. What will be the cost of 7 barrels of flour, at 7 dollars a barrel?

7. What are 7 quarts of cherries worth, at 10 cents a quart?

8. If there are 3 sheets of paper in one writing book, how many sheets will there be in 7 books of the same kind?

How many are seven times six?
How many are six times seven?
How many sixes in forty-two?
How many sevens in forty-two?
How many are seven times nine?
How many sevens in sixty-three?

LESSON IX.

8 times 1 are 8	8 times 6 are 48
8 times 2 are 16	8 times 7 are 56
8 times 3 are 24	8 times 8 are 64
8 times 4 are 32	8 times 9 are 72
8 times 5 are 40	8 times 10 are 80

1. If a ton of hay costs 7 dollars, what will 8 tons cost?

2. Four quarters make a dollar; how many quarters are there in 5 dollars?

3. When figs are worth 10 cents a pound, what will be the cost of 8 pounds?

4. At 4 cents a pound, what will 8 pounds of rice cost?

5. What will 8 hats cost, at 3 dollars apiece?

6. In one square yard there are 9 square feet; how many square feet are there in 8 square yards?

7. What will 8 bushels of potatoes cost, at 6 dimes a bushel?

8. At 6 dollars a barrel, what will 8 barrels of flour cost?

9. What is the difference between 8 times 7, and 7 times 8?

10. At 8 cents a pound, what will 8 pounds of soda cost?

How many are eight times four?
Eight times five are how many?
How many are eight times one?
How many are four and five and one?
How many are eight times four, taken from eight times five?

LESSON X.

9 times 1 are 9	9 times 6 are 54
9 times 2 are 18	9 times 7 are 63
9 times 3 are 27	9 times 8 are 72
9 times 4 are 36	9 times 9 are 81
9 times 5 are 45	9 times 10 are 90

---

1. If a man travels by stage 5 miles an hour, how far will he travel in 9 hours?
2. What will 9 sheep cost, at 6 dollars a head?
3. What will 9 pounds of sugar cost, at 9 cents a pound?
4. If Mary writes 4 lines a day, how many lines will she write in 9 days?
5. There are 10 dollars in one eagle; how many dollars are there in 9 eagles?
6. At 3 cents a skein, what will be the cost of 9 skeins of silk?
7. If a man consumes 8 pounds of meat in a week, how much will he consume in 9 weeks?
8. If it takes 7 yards of calico to make one dress, how many yards will it take to make 9 dresses?
9. What will 9 hats cost, at 3 dollars apiece?
10. What will 9 pounds of nails cost, at 6 cents a pound?

How many are nine times three?
How many are three times nine?
How many nines in twenty-seven?
Nine times nine are how many?
How many are eight times nine?
How many are *nine times nine* less *eight times nine*?

LESSON XI.

10 times 1 are 10	10 times 6 are 60
10 times 2 are 20	10 times 7 are 70
10 times 3 are 30	10 times 8 are 80
10 times 4 are 40	10 times 9 are 90
10 times 5 are 50	10 times 10 are 100

---

1. If a barrel of apples is worth 9 dimes, what are 10 barrels worth?

2. At 5 dollars a yard, what are 10 yards of broadcloth worth?

3. What will be the cost of 10 cords of wood, at 3 dollars a cord?

4. What will be the cost of 10 yards of calico, at 10 cents a yard?

5. If a man earns 8 dollars a week, how much will he earn in 10 weeks?

6. If Margaret earns 7 dollars a week, how much will she earn in 10 weeks?

7. In an orchard there are 10 rows of trees, and 6 trees in each row; how many trees in the orchard?

8. A tailor paid 4 dollars a yard for 10 yards of cloth; what did the whole cost?

9. What will 10 bushels of potatoes cost, at 10 dimes a bushel?

How many are ten times eight?
How many eights in eighty?
Ten times six are how many?
Ten times four are how many?
How many are six and four?
How many are ten times four, taken from ten times six?

LESSON XII.

GENERAL REVIEW.

For ×, *read times.*

2 × 8 =	2 × 9 =	3 × = 21	5 × = 10
3 × 9 =	8 × 2 =	8 × = 72	7 × = 49
4 × 8 =	6 × 5 =	6 × = 48	4 × = 8
7 × 5 =	4 × 7 =	5 × = 30	9 × = 81
9 × 4 =	9 × 3 =	7 × = 21	4 × = 12
6 × 3 =	5 × 7 =	6 × = 36	6 × = 54
4 × 9 =	5 × 8 =	9 × = 63	2 × = 12
3 × 4 =	9 × 9 =	3 × = 24	8 × = 40
5 × 9 =	6 × 4 =	4 × = 24	4 × = 16
7 × 6 =	8 × 3 =	7 × = 28	9 × = 72
3 × 7 =	5 × 2 =	8 × = 56	2 × = 18
8 × 9 =	7 × 7 =	5 × = 20	8 × = 16
6 × 8 =	4 × 2 =	3 × = 15	6 × = 30
5 × 6 =	9 × 5 =	3 × = 12	4 × = 28
7 × 3 =	4 × 3 =	2 × = 10	9 × = 27
6 × 6 =	6 × 9 =	8 × = 48	5 × = 35
9 × 7 =	2 × 6 =	7 × = 56	5 × = 40
3 × 8 =	8 × 5 =	5 × = 15	9 × = 45
4 × 6 =	4 × 4 =	3 × = 18	6 × = 24
7 × 4 =	9 × 8 =	8 × = 64	8 × = 24
8 × 7 =	7 × 2 =	2 × = 16	7 × = 63
5 × 4 =	2 × 4 =	3 × = 27	2 × = 8
3 × 5 =	5 × 5 =	4 × = 32	5 × = 25
4 × 5 =	9 × 6 =	7 × = 35	9 × = 54
2 × 5 =	3 × 3 =	9 × = 36	3 × = 9
8 × 6 =	2 × 3 =	6 × = 18	2 × = 6
7 × 8 =	7 × 9 =	4 × = 36	7 × = 28
5 × 3 =	4 × 5 =	6 × = 42	8 × = 32
3 × 6 =	2 × 7 =	5 × = 45	9 × = 18
8 × 8 =	6 × 7 =	7 × = 42	6 × = 60

10 + 10 + 10 + 10 + 10 =	10 + 10 + 10 + 10 + 10 + = 60
6 + 6 + 6 + 6 + 6 + 6 + 6 =	5 + 5 + 5 + 5 + 5 + 5 + = 36
4 + 4 + 4 + 4 + 4 + 4 + 4 =	3 + 3 + 3 + 3 + 3 + 3 + = 24

LESSON XIII.

PROMISCUOUS EXAMPLES.

1. If one ream of paper costs 5 dollars, what will 9 reams cost?

2. At 4 dollars apiece, what is the value of 3 hats? Of 6? Of 8? Of 7?

3. A man bought 5 brooms, at 2 dimes apiece, and 2 gallons of molasses at 4 dimes a gallon; what was the cost of the whole?

4. At 9 dollars a month, how much will a man earn in 4 months? In 6 months? In 7 months? In 9 months?

5. Bought 5 cords of wood at 6 dollars a cord, and 2 loads of hay at 7 dollars a load; which cost more, and how much?

6. How much is 6 times 9, less 4? 8 times 7, less 6? 4 times 7, less 8? 7 times 7, less 9?

7. Which is less, 6 times 8, or 5 times 9? 4 times 10, or 5 times 8? 3 times 9, or 5 times 6?

8. James sold his knife for 30 cents, and received in payment 3 quarts of chestnuts at 8 cents a quart, and the remainder in money; how much money did he receive?

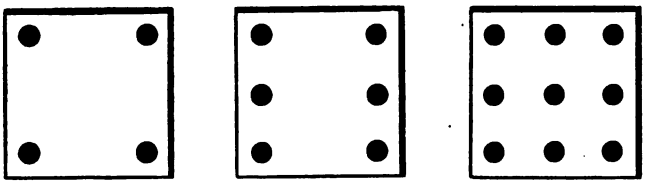
9. In 6 pairs of shoes, how many separate shoes are there?

10. If each carriage has 4 wheels, how many wheels have 8 carriages?

11. There are 8 quarts in one peck; how many quarts are there in 3 pecks?

12. There are 3 feet in a yard; how many feet are *there in 9 yards?*

LESSON I.



1. How many dots are there in the first square? How many groups of 2 dots. If there are 2 groups in 4 dots, how many dots in each group?

2. How many 2's are contained in 4?

3. Four divided by 2 are how many?

4. How many dots in the second square? How many groups of 3 dots? How many groups of 2 dots? If there are 3 groups in 6 dots, how many dots in each group? How many if there are 2 groups?

5. How many 2's are contained in 6?

6. How many 3's are contained in 6?

7. Six divided by 2 are how many?

8. Six divided by 3 are how many?

9. How many dots in the third square? How many groups of 3 dots? If there are 3 groups in 9 dots, how many dots in each group?

10. How many 3's are contained in 9?

11. Nine divided by 3 are how many?

12. How many dots in the second and third squares together? How many groups of 3 dots in these two squares? If there are 5 groups in 15 dots, how many dots in each group?

13. How many 5's are contained in 15?

14. *Fifteen* divided by 5 are how many?

LESSON II.

1 in 1, 1 time	1 in 6, 6 times
1 in 2, 2 times	1 in 7, 7 times
1 in 3, 3 times	1 in 8, 8 times
1 in 4, 4 times	1 in 9, 9 times
1 in 5, 5 times	1 in 10, 10 times

---

2 in 2, 1 time	2 in 12, 6 times
2 in 4, 2 times	2 in 14, 7 times
2 in 6, 3 times	2 in 16, 8 times
2 in 8, 4 times	2 in 18, 9 times
2 in 10, 5 times	2 in 20, 10 times

---

1. At 2 cents apiece, how many peaches can be bought for 6 cents?

SOLUTION.— *Two cents are contained in 6 cents 3 times; 3 peaches can be bought for 6 cents.*

2. At 2 cents apiece, how many oranges can you buy for 8 cents? How many for 16 cents?

3. If a man walks 2 miles an hour, how long will it take him to walk 14 miles?

4. At 2 dollars a barrel, how many barrels of apples can be bought for 18 dollars?

5. At 1 dollar a yard, how many yards of cloth can be bought for 9 dollars?

How many ones in five?
Five times one are how many?
How many are five less five ones?
How many twos in ten?
How many twos in twice five?
How many times two in eighteen?

LESSON III.

3 in 3, 1 time	3 in 18, 6 times
3 in 6, 2 times	3 in 21, 7 times
3 in 9, 3 times	3 in 24, 8 times
3 in 12, 4 times	3 in 27, 9 times
3 in 15, 5 times	3 in 30, 10 times

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1. At 3 dollars a cord, how many cords of wood can be bought for 12 dollars?

SOLUTION. — *Three dollars are contained* 4 *times in* 12 *dollars; 4 cords can be bought for* 12 *dollars.*

2. For 21 cents, how many yards of ribbon can you buy, at 3 cents a yard?

3. If the cars run a mile in 3 minutes, how many miles will they run in 30 minutes?

4. A father divided 24 marbles among his 3 boys; how many did he give to each?

5. How many lemons, at 3 cents apiece, can be bought for 18 cents?

6. At 3 cents a quart, how many quarts of milk can be bought for 27 cents?

7. Mabel paid 3 cents a spool for some thread; how many spools could she buy for 15 cents?

How many are three times nine?
How many times three in twenty-seven?
Three times seven are how many?
How many times three in twenty-one?
Nine times three, less seven times three are how many?
How many eights in twenty-four?
How many eights in eight times three?

LESSON IV.

4 in 4, 1 time	4 in 24, 6 times
4 in 8, 2 times	4 in 28, 7 times
4 in 12, 3 times	4 in 32, 8 times
4 in 16, 4 times	4 in 36, 9 times
4 in 20, 5 times	4 in 40, 10 times

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1. If 4 boys can sit on one seat, how many seats will accommodate 20 boys?

2. If a class of 4 boys answer 28 questions, how many will each answer?

3. Clinton earned 40 cents in 4 days; how many cents did he earn in one day?

4. If hats are 4 dollars apiece, how many can be bought for 20 dollars?

5. Mary gave 36 cents for 4 yards of ribbon; how much was it a yard?

6. If 4 benches will accommodate 24 pupils, how many must sit on each bench?

7. If you put 32 sheep into 4 pens, and the same number in each, how many must you put into each pen?

8. Helen paid 4 dimes a yard for lace; how many yards could she buy for 16 dimes?

9. Maud gave 12 cents for 4 skeins of silk; how much was it a skein?

How many are four times nine?
Four in thirty-six are how many?
How many are four times nine, and four?
How many are sixteen less four threes?
How many are sixteen less two threes?
How many are sixteen and two threes?

LESSON V.

5 in 5, 1 time	5 in 30, 6 times
5 in 10, 2 times	5 in 35, 7 times
5 in 15, 3 times	5 in 40, 8 times
5 in 20, 4 times	5 in 45, 9 times
5 in 25, 5 times	5 in 50, 10 times

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1. A man has 30 dollars, which he wishes to lay out in flour at 5 dollars a barrel; how many barrels can he buy?

2. If I pay 10 cents for riding 5 miles in the cars, how much is that a mile?

3. George wishes to divide 15 apples among 5 boys; how many must he give to each?

4. In a school of 35 pupils there were 5 classes; how many pupils in a class?

5. How many tons of coal, at 5 dollars a ton, can a blacksmith purchase for 40 dollars?

6. How long will it take a man to drive 50 miles with a horse and carriage, if he drives 5 miles an hour?

7. How many pounds of tea, at 5 dimes a pound, can be bought for 20 dimes?

8. Henry gave 45 cents to 5 poor children; how many cents did he give to each child?

How many fives in ten?
How many fives in fifteen?
How many more fives in fifteen than in ten?
How many are five times two?
How many are five times one?
Five times two and *five times one* are how many?

LESSON VI.

6 in 6, 1 time	6 in 36, 6 times
6 in 12, 2 times	6 in 42, 7 times
6 in 18, 3 times	6 in 48, 8 times
6 in 24, 4 times	6 in 54, 9 times
6 in 30, 5 times	6 in 60, 10 times

1. If a man can dig 48 rods of ditch in 6 days, how many rods can he dig in one day?

2. At 6 dollars a barrel, how many barrels of flour will 30 dollars buy?

3. At 6 cents a pound, how many pounds of lard can be bought for 54 cents?

4. Henry sold 6 quarts of cherries for 36 cents; how much did he get a quart?

5. If a man builds 42 rods of fence in 6 days, how many rods can he build in 1 day?

6. How long will it take you to read 60 pages, if you read 6 pages a day?

7. If 6 bushels of rye cost 6 dollars, how much does one bushel cost?

8. If a boat sails 6 miles an hour, how long will it take her to sail 24 miles?

9. When crackers are 6 cents a pound, how many pounds can be bought for 18 cents?

How many sixes in forty-two?
How many are ten sixes less seven sixes?
How many sixes in thirty?
In five times six how many sixes?
How many are ten less five?
How many are *ten times six* less *five times six*?

LESSON VII.

7 in 7, 1 time	7 in 42, 6 times
7 in 14, 2 times	7 in 49, 7 times
7 in 21, 3 times	7 in 56, 8 times
7 in 28, 4 times	7 in 63, 9 times
7 in 35, 5 times	7 in 70, 10 times

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1. How many yards of cloth, at 7 cents a yard, can be bought for 42 cents?

2. A farmer sold 7 sheep for 14 dollars; how much did he receive apiece?

3. Fred sold his sled for 35 cents; how many slates, at 7 cents apiece, can he buy for the money?

4. If 7 yards of calico will make a dress, how many dresses can be made from a piece containing 28 yards?

5. In one week there are 7 days; how many weeks in 21 days? In 28 days? In 56 days? In 70 days?

6. Charles paid 7 cents for 7 slate pencils; how much did he pay apiece?

7. If a man can build 49 rods of stone wall in 7 days, how much can he build in one day?

8. When hops are 7 cents a pound, how many pounds can be bought for 70 cents?

9. How many times 7 in 63?

How many sevens in twenty-eight?
How many are four times seven?
How many fours in twenty-eight?
In thirty-five how many sevens?
Seven times five are how many?
How many are ten times seven?
How many sevens in seventy?

LESSON VIII.

8 in 8, 1 time	8 in 48, 6 times
8 in 16, 2 times	8 in 56, 7 times
8 in 24, 3 times	8 in 64, 8 times
8 in 32, 4 times	8 in 72, 9 times
8 in 40, 5 times	8 in 80, 10 times

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1. George can buy a hoop for 8 cents; how many hoops can he buy for 40 cents?

2. A man paid 72 cents for 8 pounds of sugar; what was the price of one pound?

3. How many bins will be required to hold 56 bushels of oats, if each bin holds 8 bushels?

4. At 8 dollars a load, how many loads of hay can be bought for 64 dollars?

5. A farmer sold 8 barrels of apples for 24 dollars; how much did he receive for one barrel?

6. If there are 8 trees in each row, how many rows are there in an orchard containing 80 trees?

7. How many spelling books, at 8 cents apiece, can you buy for 48 cents?

8. A laborer received 16 dollars for 8 days' work; how much was that a day?

9. James bought 8 lemons for 32 cents; what was the cost of one lemon?

How many eights in sixty-four?
How many eights in forty?
How many more are *eight times eight* than *five times eight*?
How many eights in fifty-six?
How many sevens in fifty-six?
How many times eight in seventy-two?

LESSON IX.

9 in 9, 1 time	9 in 54, 6 times
9 in 18, 2 times	9 in 63, 7 times
9 in 27, 3 times	9 in 72, 8 times
9 in 36, 4 times	9 in 81, 9 times
9 in 45, 5 times	9 in 90, 10 times

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1. How many classes, of 9 pupils each, can be formed of 45 pupils?

2. When soap is 9 cents a cake, how many cakes can be bought for 63 cents?

3. A class of 9 pupils present their teacher with a book which costs 90 cents; how many cents must each pay towards the book?

4. If you travel 9 miles an hour, how long will it take you to travel 81 miles?

5. A farmer distributed 9 bushels of potatoes equally among 9 poor families; how many did he give to each?

6. If a man spends 9 cents a day for car-fares, how long will 54 cents last him?

7. For 72 cents, how many yards of cloth can a lady buy at 9 cents a yard?

8. William sold 9 quarts of cherries for 36 cents; how much did he receive a quart?

How many are ten times nine?
How many nines in ninety?
How many nines in eighty-one?
How much more is ninety than eighty-one?
How many are *nine times ten* less *nine times one*?
How many nines in thirty-six?

LESSON X.

10 in 10, 1 time	10 in 60, 6 times
10 in 20, 2 times	10 in 70, 7 times
10 in 30, 3 times	10 in 80, 8 times
10 in 40, 4 times	10 in 90, 9 times
10 in 50, 5 times	10 in 100, 10 times

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1. When figs are 10 cents a pound, how many pounds can I buy for 80 cents?

2. At 10 dollars an acre, how many acres of land can be bought for 100 dollars?

3. How long will it take a boy to earn 90 cents, if he earns 10 cents a day?

4. In one dime there are 10 cents; how many dimes in 30 cents?

5. At 10 cents apiece, how many glass lamp chimneys can be bought for 50 cents?

6. How long will it take you to read 70 pages, if you read 10 pages a day?

7. When shawls are 10 dollars apiece, how many can be bought for 60 dollars?

8. How long will it take you to earn 40 dollars, if you earn 10 dollars a month?

9. At 10 cents apiece, how many melons can be bought for 20 cents?

How many tens in seventy?
How many tens in thirty?
Seven tens and three tens are how many?
Ten tens are how many?
How many tens in one hundred?
How many are seven tens less three tens?

LESSON XI.

GENERAL REVIEW.

Read ÷, divided by.

36 ÷ 6 =	15 ÷ 3 =	24 ÷	= 3	12 ÷	= 4
42 ÷ 7 =	25 ÷ 5 =	45 ÷	= 9	28 ÷	= 7
18 ÷ 6 =	63 ÷ 9 =	42 ÷	= 7	32 ÷	= 8
81 ÷ 9 =	12 ÷ 6 =	56 ÷	= 7	48 ÷	= 8
35 ÷ 5 =	28 ÷ 7 =	18 ÷	= 2	14 ÷	= 7
72 ÷ 8 =	16 ÷ 4 =	40 ÷	= 8	45 ÷	= 5
27 ÷ 9 =	49 ÷ 7 =	63 ÷	= 9	48 ÷	= 6
20 ÷ 4 =	36 ÷ 4 =	27 ÷	= 9	56 ÷	= 8
18 ÷ 3 =	64 ÷ 8 =	21 ÷	= 3	21 ÷	= 7
54 ÷ 6 =	40 ÷ 8 =	16 ÷	= 2	18 ÷	= 9
24 ÷ 8 =	12 ÷ 3 =	8 ÷	= 1	24 ÷	= 8
45 ÷ 5 =	28 ÷ 4 =	12 ÷	= 3	16 ÷	= 8
42 ÷ 6 =	32 ÷ 8 =	35 ÷	= 5	54 ÷	= 6
56 ÷ 8 =	48 ÷ 6 =	10 ÷	= 2	24 ÷	= 4
18 ÷ 9 =	14 ÷ 2 =	14 ÷	= 2	72 ÷	= 8
40 ÷ 5 =	45 ÷ 9 =	6 ÷	= 3	32 ÷	= 4
63 ÷ 7 =	48 ÷ 8 =	24 ÷	= 6	8 ÷	= 2
27 ÷ 3 =	56 ÷ 7 =	30 ÷	= 6	20 ÷	= 4
21 ÷ 7 =	21 ÷ 3 =	36 ÷	= 4	15 ÷	= 3
16 ÷ 8 =	18 ÷ 2 =	30 ÷	= 5	7 ÷	= 1
8 ÷ 8 =	24 ÷ 3 =	36 ÷	= 6	15 ÷	= 5
12 ÷ 4 =	16 ÷ 2 =	42 ÷	= 6	25 ÷	= 5
35 ÷ 7 =	32 ÷ 4 =	18 ÷	= 3	63 ÷	= 7
10 ÷ 5 =	24 ÷ 6 =	81 ÷	= 9	12 ÷	= 2
14 ÷ 7 =	72 ÷ 9 =	35 ÷	= 7	28 ÷	= 4
6 ÷ 2 =	15 ÷ 5 =	72 ÷	= 9	16 ÷	= 4
24 ÷ 4 =	8 ÷ 4 =	27 ÷	= 3	49 ÷	= 7
30 ÷ 5 =	20 ÷ 5 =	20 ÷	= 5	36 ÷	= 9
36 ÷ 9 =	10 ÷ 2 =	18 ÷	= 6	64 ÷	= 8
30 ÷ 6 =	7 ÷ 7 =	54 ÷	= 9	40 ÷	= 5
7 × 7 =	14 − 9 =	12 +	= 20	9 ×	= 36
8 × 8 =	17 − 8 =	8 +	= 15	12 ×	= 96
9 × 9 =	16 − 5 =	7 +	= 16	7 ×	= 63

LESSON XII.

PROMISCUOUS EXAMPLES.

1. When flour is 7 dollars a barrel, how many barrels can be bought for 63 dollars?

SOLUTION. — *Seven dollars are contained in 63 dollars 9 times; 9 barrels can be bought for 63 dollars.*

2. If it takes 81 bushels of apples to make 9 barrels of cider, how many bushels will make one barrel?

3. How long will it take 5 men to do a job of work that one man can do in 30 days?

4. How long will 12 dollars pay for my board, at the rate of 6 dollars a week?

5. If 54 pounds of provision last one man 9 days, how many pounds would last him one day?

6. Charles read 100 pages in 10 days; how many pages did he read each day?

7. A cabinet maker received 45 dollars for some chairs at 5 dollars apiece; how many chairs did he sell?

8. If one man can mow a field of grass in 18 days, in what time would 6 men mow the same?

9. A farmer sold some hay for 30 dollars, and took 10 sheep for payment? what was the cost of each sheep?

10. There are 7 days in 1 week; how many weeks are there in 28 days?

11. There are 10 dollars in one eagle; how many eagles are there in 100 dollars?

12. If one man can do a piece of work in 20 days, *how long* will it take 5 men to do it?

LESSON XIII.

1. How many tons of hay, at 6 dollars a ton, will pay for 8 yards of broadcloth, at 3 dollars a yard?

SOLUTION. — *Eight yards of broadcloth at 3 dollars a yard cost 24 dollars; 6 dollars are contained 4 times in 24 dollars; 4 tons of hay at 6 dollars a ton will pay for 8 yards of broadcloth at 3 dollars a yard.*

2. How many dozen of eggs, costing 9 cents a dozen, will pay for 6 yards of calico, at 6 cents a yard?

3. Charles sold 6 quarts of beech nuts, at 4 cents a quart, and took his pay in oranges, at 3 cents apiece; how many oranges did he receive?

4. At 6 dollars a barrel, how many barrels of flour will pay for 3 barrels of pork, at 10 dollars a barrel?

5. If 5 men can hoe a field of corn in 6 days, how long will it take one man?

6. If 8 men can build a shed in 10 days, how many men must be employed to build it in one day?

7. If 4 men can do a piece of work in 7 days, how long will it take one man to do it?

8. How many weeks' labor, at 8 dollars a week, will pay for 10 barrels of apples, at 4 dollars a barrel?

9. How many quarts of berries, at 10 cents a quart, will pay for 5 dozen oranges, at 12 cents a dozen?

10. If 3 men can build a wall in 8 days, how long will it take 4 men?

11. How many pounds of sugar, at 4 cents a pound, will pay for 2 pounds of butter at 30 cents a pound?

12. How many pounds of coffee, at 35 cents a pound, can be bought for 5 dozen apples at 7 cents a dozen?

LESSON XIV.

1. If 7 oranges cost 28 cents, what will 3 oranges cost?

SOLUTION. — *Twenty-eight divided by* 7 *is* 4; 1 *orange costs* 4 *cents;* 3 *oranges will cost* 3 *times* 4 *cents, which are* 12 *cents.*

2. If 6 pounds of soda cost 60 cents, what will 9 pounds cost?

3. A farmer sells 8 sheep for 24 dollars; how much does he receive for 5 sheep?

4. If a man can earn 72 dollars in 8 weeks, how much can he earn in 10 weeks?

5. Jane bought 5 steel pens for 15 cents; what would be the cost of 10 pens at the same rate?

6. A grocer sold 8 pounds of sugar for 40 cents; what would be the cost of 10 pounds at the same rate?

7. If 3 slates cost 27 cents, what will 8 cost?

8. If a man can chop 16 cords of wood in 8 days, how much can he chop in 3 days? In 5 days? In 7 days? In 10 days? In 12 days?

9. If 7 yards of calico cost 63 cents, what will 3 yards cost? 5 yards? 6 yards? 9 yards? 10 yards?

10. When 4 cords of wood are worth 20 dollars, what will 9 cords be worth?

11. When 10 pounds of sugar cost 50 cents, how much will 8 pounds cost?

12. A carpenter earns 21 dollars in 7 days; how much will he earn in 12 days?

13. If 7 yards of cloth cost 21 dollars, what will 5 yards cost?

LESSON XV.

1. Isabel had 15 pinks, and gave 6 to Clara, and 4 to Herbert; how many did she keep for herself?

SOLUTION. — *Six pinks and 4 pinks are 10 pinks; 15 pinks less 10 pinks are 5 pinks; she kept 5 pinks for herself.*

2. Frank, having 20 marbles, gave 9 to Henry, and 6 to John; how many had he left?

3. From a piece of cloth containing 12 yards, 5 yards were cut for a coat, 3 yards for a pair of pantaloons, and 1 yard for a vest; how many yards were left?

4. If 2 men start from the same place and travel in opposite directions, one at the rate of 4 miles an hour, and the other at the rate of 5 miles an hour, how far apart will they be at the end of 1 hour? At the end of 2 hours? 5 hours? 6 hours? 8 hours?

5. A grocer sold 2 pounds of rice at 6 cents a pound, a pound of soda for 8 cents, and a bar of soap for 7 cents, and was paid in berries at 9 cents a quart; how many quarts of berries did he receive?

6. If a man travels 36 miles in 9 hours, how far will he travel in 5 hours? In 6 hours? In 7 hours?

7. Twelve months make one year; how many years are there in 60 months?

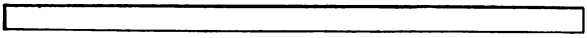
8. How many quarts of milk, at 8 cents a quart, will pay for 4 yards of cloth, at 12 cents a yard?

9. Fred caught 4 fish, John 3, and Frank 5. They divided them equally; how many did each get?

10. A train running 30 miles an hour started at 8 in the morning and without stopping reached its destination at 11 the same morning; how far did it travel?

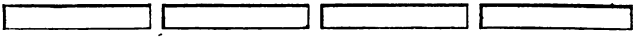
LESSON I.

When a unit, or a whole thing, is divided into any number of equal parts, one or more such parts is called a fraction.

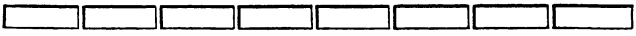


Take a slip of paper, and divide it into two equal parts. Each of the parts is called one half, — written $\frac{1}{2}$.

Divide both these halves into two equal parts. How many parts of the whole slip have you now? One of the four equal parts into which anything is divided is called one fourth, written $\frac{1}{4}$. Three of the parts are called three fourths, — written $\frac{3}{4}$.



Divide each of these fourths into two equal parts. You now have eight parts, and each of these parts is called one eighth, — written $\frac{1}{8}$. Three of the parts are called $\frac{3}{8}$, five are called $\frac{5}{8}$.



Observe that in one whole one there are two halves, four fourths, or eight eighths; in one half there are two fourths, or four eighths; and in one *fourth there* are two eighths.

LESSON II.

1. What is $\frac{1}{2}$ of 4? Of 6? Of 8? Of 10? Of 12? Of 14? Of 16?

2. What is $\frac{1}{4}$ of 8? $\frac{3}{4}$ of 12? $\frac{1}{4}$ of 16? $\frac{3}{4}$ of 20? $\frac{1}{4}$ of 24? $\frac{3}{4}$ of 24? $\frac{3}{4}$ of 16?

3. What is $\frac{1}{8}$ of 16? $\frac{3}{8}$ of 16? $\frac{1}{8}$ of 24? $\frac{3}{8}$ of 24? $\frac{5}{8}$ of 32? $\frac{3}{8}$ of 40? $\frac{1}{8}$ of 48?

4. Mary cut an apple into 4 equal parts; what is each of the parts called? What are 2 parts called? Three parts?

5. James divided an orange into 2 equal parts, and gave 1 of them to Frank; what part of the orange did he give to Frank? What part of the orange did he keep himself?

6. Fred gave half an orange to each of 5 boys, and kept half an orange for himself; how many oranges did he divide among them all?

7. In 5 dollars how many halves? How many fourths?

8. In 2 dollars how many quarters, or fourths?

9. When $\frac{1}{4}$ of a barrel of flour is worth 2 dollars, what is a barrel of flour worth?

10. If a dozen (12) oranges cost 20 cents, how much is $\frac{1}{4}$ of a dozen worth?

11. If a pound of spice is worth 40 cents, what is $\frac{1}{8}$ of a pound worth? What are $\frac{3}{8}$ worth?

12. How much must I pay for half a bushel of apples, when apples are worth 80 cents a bushel?

13. If a quarter of a pound of rice costs 8 cents, what will a pound cost?

14. How many quarters are there in 10 dollars?

LESSON III.

1. What will $\frac{3}{4}$ of a pound of butter cost, at 32 cents a pound?

SOLUTION. — *When* 1 *pound of butter costs* 32 *cents,* $\frac{1}{4}$ *of a pound costs* $\frac{1}{4}$ *of* 32 *cents, which is* 8 *cents;* $\frac{3}{4}$ *of a pound will cost* 3 *times* 8 *cents, which are* 24 *cents.*

2. What will $\frac{5}{8}$ of a pound of cheese cost, when cheese is worth 16 cents a pound?

3. What must I pay for $\frac{3}{5}$ of a yard of cloth that is worth 80 cents a yard?

4. At 2 dollars a yard, what part of a yard of cloth can I purchase for half a dollar?

5. When eggs are worth 30 cents a dozen, what part of a dozen eggs can I buy for 15 cents?

6. If half a pound of coffee costs 20 cents, how much must I pay for a quarter of a pound?

7. When $\frac{1}{4}$ of a pound of spice costs 12 cents, what will $\frac{1}{8}$ of a pound cost?

8. What is the cost of $\frac{3}{4}$ of a yard of cloth at 2 dollars a yard?

9. How many minutes in half an hour? In three fourths of an hour?

10. There are 48 pupils in a school; $\frac{1}{4}$ of these are in one class-room. How many pupils are there in that class-room?

11. I had 8 dollars, and spent $\frac{7}{8}$ of it; how much did I spend? How much have I left?

12. How many yards in $\frac{1}{2}$ a piece of cloth 18 yards long?

13. There were 24 apples in a basket, and Henry took out $\frac{5}{8}$ of them; how many were taken out?

LESSON IV.

1. If $\frac{5}{8}$ of a yard of cloth cost 30 cents, what is a yard of the cloth worth?

SOLUTION. — *If* $\frac{5}{8}$ *of a yard costs* 30 *cents,* $\frac{1}{8}$ *of a yard will cost* $\frac{1}{5}$ *of* 30 *cents, which is* 10 *cents; and* $\frac{8}{8}$, *or a whole yard, will cost* 8 *times* 10 *cents, which are* 80 *cents.*

2. What is flour worth a barrel, when $\frac{1}{4}$ of a barrel costs 6 dollars?

3. What is butter worth a pound, when $\frac{5}{8}$ of a pound costs 25 cents?

4. What are apples worth a bushel, when $\frac{3}{4}$ of a bushel can be bought for 75 cents?

5. What is half a pound of tea worth, when quarter of a pound costs 40 cents?

6. What is quarter of a yard of cloth worth, when half a yard is worth 3 dollars? What is $\frac{1}{4}$ of a yard worth? $\frac{5}{8}$ of a yard?

7. What is $\frac{1}{8}$ of a bushel of wheat worth, when half a bushel costs 48 cents?

8. How much must I pay for a ton of hay, when I can buy $\frac{3}{4}$ of a ton for 15 dollars?

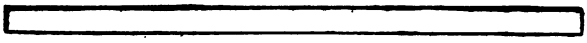
9. A man walks 4 miles, which is $\frac{1}{4}$ the distance he has to travel; how far must he travel?

10. If $\frac{5}{8}$ of a pound of coffee cost 25 cents, what will a pound cost?

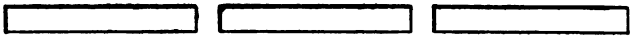
11. I spent 24 cents, which was $\frac{3}{4}$ of what I had; how much did I have? How much have I left? What part of the whole money have I left?

12. If 9 inches are $\frac{3}{4}$ of a foot, how many inches are there in a foot?

LESSON V.



Divide a slip of paper into three equal parts. Each of the three equal parts into which anything is divided is called one third, — written $\frac{1}{3}$.



Divide each of these thirds into two equal parts. Into how many parts is the slip now divided? One of the six equal parts into which anything is divided is called one sixth, — written $\frac{1}{6}$.

Divide the slip into halves, as you did in Lesson I.

Now divide each of these halves into thirds. Observe that you have six equal parts, just the same as when you divided the thirds into halves.

You now see that $\frac{1}{2}$ of $\frac{1}{3}$ is $\frac{1}{6}$, and that $\frac{1}{3}$ of $\frac{1}{2}$ is $\frac{1}{6}$; that 2 sixths make one third, and that 3 sixths make *one half.*

LESSON VI.

1. What is $\frac{1}{3}$ of 6? $\frac{2}{3}$ of 9? $\frac{1}{3}$ of 12? $\frac{2}{3}$ of 15? $\frac{1}{3}$ of 18?

2. What is $\frac{1}{6}$ of 12? $\frac{5}{6}$ of 18? $\frac{1}{6}$ of 24? $\frac{5}{6}$ of 36? $\frac{1}{6}$ of 42?

3. Henry divided an apple into 3 equal parts, and gave 2 of the parts away; what part of the apple did he give away? What part did he keep?

SOLUTION. — *Each of the 3 equal parts into which the apple was divided is $\frac{1}{3}$; since he gave away 2 of the parts, he gave away $\frac{2}{3}$ of the apple; and since a whole apple is $\frac{3}{3}$, he kept $\frac{3}{3} - \frac{2}{3}$, or $\frac{1}{3}$.*

4. In a yard of cloth how many thirds are there? How many quarters? How many halves? How many sixths?

5. Mabel had to learn to spell 12 words; she learned 10 of them before she went to school; what part of the lesson had she to learn at school?

6. James had half a melon, and divided it into 3 equal parts; he gave away 2 of these parts; what part of the melon did he give away? What part did he keep for himself?

7. A farmer gave a lot of wood-land containing 60 acres to his 3 sons, giving 20 acres to each; what part of the lot did each receive?

8. What is $\frac{1}{8}$ of 72?

9. John had 36 cents; he gave one sixth to his brother, and spent one sixth; how much did he have left? If he then spent another sixth, how much did he have left?

10. How much is $\frac{1}{6}$ of 30? $\frac{2}{6}$ of 30? $\frac{3}{6}$ of 30? $\frac{4}{6}$ of 30? $\frac{5}{6}$ of 30?

LESSON VII.

1. If $\frac{2}{3}$ of a pasture costs 60 dollars, what is the whole pasture worth?

SOLUTION. — *When $\frac{2}{3}$ of a pasture costs 60 dollars, $\frac{1}{3}$ will cost $\frac{1}{2}$ of 60 dollars, which is 30 dollars; $\frac{3}{3}$, or the whole pasture, will cost 3 times 30 dollars, which are 90 dollars.*

2. If $\frac{5}{6}$ of a dozen oranges cost 25 cents, what was the price of a dozen?

3. Three men buy a house for $6000, sharing the expense equally; how much does each pay?

4. When 4 peaches cost 5 cents, what is the price of a dozen peaches?

5. When $\frac{3}{4}$ of a yard of cloth can be bought for 50 cents, what is the price of a yard?

6. If 8 apples cost 4 cents, what is the price of a dozen?

7. If a man can walk $\frac{3}{5}$ of a mile in 10 minutes, how far can he walk in an hour?

8. What part of an hour is 20 minutes? 30 minutes? 15 minutes?

9. There are 12 inches in 1 foot; how many inches in $\frac{1}{3}$ of a foot? How many in $\frac{1}{6}$ of a foot?

10. Eight inches are what part of a foot?

11. Four inches are what part of a foot?

12. Two thirds of a lot cost $90; what was the value of the whole lot?

13. If $\frac{1}{8}$ of a pound of butter costs 5 cents, what is the price of the butter?

14. If 12 apples cost 36 cents, what will 4 apples cost?

15. What is $\frac{1}{5}$ of 20? $\frac{2}{5}$ of 20? $\frac{3}{5}$ of 20?

LESSON VIII.

1. How many pieces, each 2 inches long, can you cut from a stick 1 foot long?

2. What part of the dial of a clock does the hour hand pass over in 20 minutes? What part in 10 minutes? What part in 40 minutes? What part in 50 minutes?

3. George had 12 dollars to purchase presents for 6 people; if he spent the same for every one, how much did each present cost?

4. How much is $\frac{5}{8}$ of 24 dollars?

5. Emma had a 25 cent coin and a 5 cent coin. She lost the smaller coin; what part of her money did she lose?

6. Henry earned 3 dollars in 6 days; how long did he have to work for 50 cents?

7. If a man earns 30 cents an hour, how much can he earn in 20 minutes?

8. Ten inches are what part of 1 foot?

9. Fred bought a pair of skates for 6 dollars, to be paid for in 3 equal payments; how much was each payment?

10. Mary's age is $\frac{5}{6}$ of Bertha's age. Mary is 10 years old; how old is Bertha?

11. Mary had 50 cents. She spent 25 cents; what part of her money did she spend? What part did she have left?

12. Ten seconds are what part of a minute? Twenty seconds? Thirty seconds? Fifteen seconds?

13. If $\frac{1}{3}$ of a yard of cloth cost 3 dollars, what will 2 yards cost?

LESSON I.

UNITED STATES MONEY.

10 cents (cts.)	make 1 dime,	marked	d.
10 dimes (100 cts.)	" 1 dollar,	"	$.
10 dollars	" 1 eagle,	"	E.

---

1. How many cents in 5 dimes?

SOLUTION. — *In* 1 *dime there are* 10 *cents; in* 5 *dimes there are* 5 *times* 10 *cents, which are* 50 *cents.*

2. How many dimes in $5? In $10? In $7?

3. Frank bought 2 dozen oranges at 2 dimes a dozen; how many cents did he pay for the oranges?

4. Henry bought a book for $2; how many dimes did he need to pay for the book?

5. How many dimes in 40 cents?

SOLUTION. — *In* 10 *cents there is* 1 *dime; in* 40 *cents there are as many dimes as* 10 *is contained times in* 40, *which are* 4.

6. How many dimes in 70 cents? In 90? In 30?

7. How many dollars in 20 dimes? In 50? In 60?

8. How many dimes in $3? In $10? In $4?

9. How many dollars in 500 cents? In 800? In 200?

10. Edith bought 10 yards of cloth, at 2 dimes a yard; how many dollars did the cloth cost?

11. Maud earned 20 dollars in 20 days; how many dollars did she earn each day? How many dimes?

12. If Fred saves a dime every day, how many cents will he save in a week?

LESSON II.

LIQUID OR WINE MEASURE.

4 gills (gi.)	make	1 pint,	marked	pt.
2 pints	"	1 quart,	"	qt.
4 quarts	"	1 gallon,	"	gal.

---

1. How many gills in 3 pints? In 5? In 4? In 8?

2. How many pints in 8 gills? In 20? In 16? In 12? In 24? In 30?

3. How many pints in 4 quarts? In 10? In 12?

4. How many quarts in 6 pints? In 8? In 16?

5. How many quarts in 3 gallons? In 5? In 4?

6. How many gallons in 8 quarts? In 12? In 24? In 36? In 60?

7. At $1 a gallon, what will 2 quarts of syrup cost?

8. What will 2 gallons of milk cost, at 7 cents a quart?

9. At 15 cents a gallon, what will 10 gallons of kerosene cost?

10. I buy a quart of milk every day, at 7 cents a quart; how much do I pay for milk in a week? In a month?

11. When milk is 8 cents a quart, how much do 3 pints cost? 5 pints? 1 gallon?

12. When vinegar is worth 8 cents a pint, how much must I pay for 1 gill? How much for 1 quart?

13. What will 3 quarts of vinegar cost, at 40 cents a gallon?

14. When 3 pints of milk cost 9 cents, what is the price of a quart? Of a gallon?

LESSON III.

DRY MEASURE.

2 pints	make	1 quart,	marked	qt.
8 quarts	"	1 peck,	"	pk.
4 pecks	"	1 bushel,	"	bu.

---

1. How many quarts in 3 pecks? In 5? In 2? In 6? In 10?

2. How many pecks in 32 quarts? In 16? In 20? In 40? In 64?

3. How many pecks in 5 bushels? In 7? In 10? In 4? In 9? In 8?

4. How many bushels in 12 pecks? In 20? In 32? In 60? In 72?

5. What will 3 quarts of berries cost, at 10 cents a quart?

6. If a horse is fed on 4 quarts of oats 3 times a day, how many pecks will he eat in 4 days?

7. When a bushel of meal is worth 80 cents, what is the value of half a peck? Of 2 quarts?

8. What must I pay for 5 pints of berries, at 12 cents a quart?

9. A dealer buys 3 pecks of oats, 5 pecks of corn, 7 pecks of wheat, and 5 pecks of rye; how many bushels of grain does he buy?

10. Fred and Henry pick berries for 6 days, each picking 8 quarts daily; how many pecks does each pick in all? How many bushels do both together pick?

11. What is the value of 2 bushels of corn, at 15 cents a peck?

LESSON IV.

TROY WEIGHT.

24 grains (gr.)	make	1 pennyweight,	marked	pwt.
20 pennyweights	"	1 ounce,	"	oz.
12 ounces	"	1 pound,	"	lb.

---

1. How many grains in 10 pennyweights?

SOLUTION. — *In* 1 *pennyweight there are* 24 *grains; in* 10 *pennyweights there are* 10 *times* 24 *grains, which are* 240 *grains.*

2. How many pounds in 60 ounces?

SOLUTION. — *In* 12 *ounces there is* 1 *pound; in* 60 *ounces there are as many pounds as* 12 *is contained times in* 60, *which are* 5.

3. How many grains in 2 pennyweights? In 3? In 9? In 8? In 10?

4. How many ounces in 40 pennyweights? In 100? In 80? In 60?

5. How many pounds of silver in 48 ounces? In 80? In 72? In 24?

6. How many ounces of gold in 3 pounds? In 2?

7. A miner sold $3\frac{1}{2}$ ounces of gold at $16 an ounce. He worked 7 days to get the gold; how many dollars did he earn each day?

8. Maud bought a gold chain, at $2 a pennyweight. The chain cost $24; how much did it weigh?

9. How many silver quarters weigh $2\frac{1}{2}$ pounds, if 5 silver quarters weigh 1 ounce?

10. A bronze cent weighs 48 grains; how many pennyweights does it weigh?

11. How many cents can be made from 1 ounce of bronze?

LESSON V.

AVOIRDUPOIS WEIGHT.

16 ounces	make 1 pound,	marked lb.
100 pounds	" 1 hundredweight,	" cwt.
20 hundredweight	" 1 ton,	" T.

A ton is 2000 pounds.

---

1. How many ounces in 3 pounds?

SOLUTION. — *In* 1 *pound there are* 16 *ounces; in* 3 *pounds there are* 3 *times* 16 *ounces, which are* 48 *ounces.*

2. How many hundredweights in 500 pounds?

SOLUTION. — *In* 100 *pounds there is* 1 *hundredweight; in* 500 *pounds there are as many hundredweights as* 100 *is contained times in* 500, *which are* 5.

3. How many pounds in half a ton?

4. How many tons in 4000 pounds?

5. When sugar is worth 5 cents a pound, how many pounds will 1 dollar purchase?

6. A grocer buys a pound of spice for 1 dollar, and sells it at a dime an ounce; how many cents does he gain?

7. When figs are worth 20 cents a pound, how many ounces will 5 cents purchase?

8. A farmer sold 5 loads of hay, each load weighing 12 hundredweight, at $20 a ton; how much did he get for all the hay? How much was each load worth?

9. What will 4 tons of coal cost, at $5\frac{1}{2}$ a ton?

10. How many pounds of coffee, at 4 dimes a pound, can one buy for $2?

LESSON VI.

LONG MEASURE.

12	inches (in.)	make 1 foot,	marked	ft.
3	feet	" 1 yard,	"	yd.
5½	yards	" 1 rod,	"	rd.
40	rods	" 1 furlong,	"	fur.
8	furlongs	" 1 mile,	"	mi.

---

1. How many inches in 1 yard? In ½ of a yard? In ¼ of a yard?

2. How many feet in 2 rods? In 4 rods?

3. How many rods in ½ of a mile? In ¼ of a mile?

4. How many yards in 12 feet? In 6 feet?

5. How many miles in 40 furlongs? In 80?

6. What part of a mile is 40 rods?

7. If it is 80 rods from your schoolhouse to the post office, how many furlongs is the distance? What part of a mile is it?

8. If it is 12 feet from the floor to the ceiling in your schoolroom, what is the height in yards?

9. Frank jumps 9 feet; Harry jumps 100 inches. Which jumps farther, and by how many inches?

10. How many yards does Frank jump?

11. What does it cost to make a carriage drive, ⅛ of a mile long, at $2½ a rod?

12. What will 3½ yards of cloth cost, at $2 a yard?

13. What will it cost to build 4 rods of road, at $1½ a yard?

14. What is the value of a piece of cloth, 9 inches long, cut from goods worth 60 cents a yard?

15. 72 inches are how many feet?

LESSON VII.

TIME TABLE.

60 seconds (sec.)	make	1 minute,	marked	m.
60 minutes	"	1 hour,	"	h.
24 hours	"	1 day,	"	da.
7 days	"	1 week,	"	w.
52 weeks (nearly)	"	1 year,	"	yr.

---

1. How many minutes in 2 hours? In 5 hours?

2. How many weeks in 14 days? In 35 days?

3. How many weeks in $\frac{1}{4}$ of a year?

4. How many hours in $\frac{1}{8}$ of a day? In $\frac{1}{4}$ of a day? In 5 days? In a week?

5. What part of a minute is 30 seconds? 15?

6. A man works 8 hours a day, at 20 cents an hour, for $5\frac{1}{2}$ days in a week; how much does he earn in the week?

7. A railroad train runs at the rate of 40 miles an hour; how many miles will it run in 6 hours?

8. A boy works from 8 o'clock in the morning until 5 o'clock in the afternoon, except during 1 hour for dinner, and receives 96 cents for his day's work; how much does he earn in an hour? How much would he earn in 10 hours?

9. A clerk earns 10 dollars a week; how much does he earn in a year?

10. At the rate of 1 mile in 5 minutes, how far will a horse go in 1 hour?

11. At the rate of 1 mile in 2 minutes, how many furlongs will a horse run in 30 seconds?

12. How many hours are there in a week?

LESSON VIII.

TIME TABLE (*Continued*).

The following table gives the names of the 12 calendar months, in their order, and the number of days in each: —

1. January	has 31 days.	7. July	has 31 days.
2. February	" 28 days.	8. August	" 31 days.
3. March	" 31 days.	9. September	" 30 days.
4. April	" 30 days.	10. October	" 31 days.
5. May	" 31 days.	11. November	" 30 days.
6. June	" 30 days.	12. December	" 31 days.

NOTE. — *Every fourth year (called leap-year) February has 29 days.*

---

1. March, April, and May are the months of spring; how many days in spring?

2. June, July, and August are the summer months; how many days in summer?

3. September, October, and November are the months of autumn; how many days in autumn?

4. The winter months are December, January, and February; how many more days in summer than in winter?

5. Saving $5 a month, how much will a man save in a year?

6. A book-keeper earns $30 a week; how much does he earn each day?

7. How long will it take to save $100, if one can save $20 each month?

8. A man working all winter saved $84; how much did he save each month?

9. A man earned $1200 a year; how much did he earn a month?

LESSON IX.

GENERAL EXAMPLES.

1. What is the cost of 2 tons of coal, at $5\frac{1}{2}$ a ton?

2. Working 6 days in a week, how much can a laborer earn, at $1\frac{1}{2}$ a day?

3. I purchase a hat for $6, boots for $7, and an overcoat for $25; how much do I pay for all?

4. How much sugar, at 5 cents a pound, can you purchase for $2?

5. How many yards of cloth, at $2\frac{1}{2}$ a yard, can you buy for $20?

6. What will 2 quarts of syrup cost, at $1 a gallon?

7. At 75 cents a bushel, how many bushels of potatoes will $3 buy?

8. What is the value of $\frac{1}{4}$ of a pound of gold, at $16 an ounce?

9. Charles earns $80 a month, Henry earns $3 a day; which earns more in a month of 25 working days, and how much more in a month of 27 working days?

10. If a horse can trot a mile in 2 minutes and 40 seconds, how long will it take him to go 80 rods?

11. At $8 a ton, what will $4\frac{1}{4}$ tons of coal cost?

12. If a barrel of flour lasts a family 4 weeks, how long will $5\frac{1}{2}$ barrels last?

13. How many minutes are there in three hours? In a quarter of an hour?

14. What will be the cost of a ton of hay, at half a cent a pound?

15. I had $12, and spent all but $4 on cloth at $2 *a yard; how many* yards of cloth did I buy?

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Webster [illegible] is found in nearly [illegible] nearly every county has its Webst [illegible] of all [illegible] and [illegible] Webster [illegible] all [illegible] Webster [illegible] and [illegible] Webster [illegible] and [illegible] Webster [illegible] and